



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,320	11/12/2003	Craig S. Gittleman	GP-303297	6448

7590 10/23/2006
CARY W. BROOKS
General Motors Corporation
Legal Staff, Mail Code 482-C23-B21
P.O. Box 300
Detroit, MI 48265-3000

EXAMINER

LAWRENCE JR, FRANK M

ART UNIT	PAPER NUMBER
----------	--------------

1724

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/706,320
Filing Date: November 12, 2003
Appellant(s): GITTLEMAN ET AL.

MAILED

OCT 23 2006

GROUP 1700

John A. Miller
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 18, 2006 appealing from the Office action mailed March 3, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3986849	Fuderer et al	10-1976
5820656	Lemcoff et al.	10-1998
5807423	Lemcoff et al.	9-1998
6299994	Towler et al.	10-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 6 and 7 are rejected under 35 U.S.C 112, first paragraph. This rejection is fully set forth in the prior non-final Office action mailed March 3, 2006.

Claims 6, 7, 13, 15, 16, 38, 40, 41, 58, 60 and 61 are rejected under 35 U.S.C. 112, second paragraph. This rejection is fully set forth in the prior non-final Office action mailed March 3, 2006. This rejection contains a typographical error. In line 3, "Claims 67" should read "Claims 6 and 7."

Claims 1-8, 11, 14-17, 20-23, 26-33, 36, 39-42, 45-48, 51-62 and 65-71 are rejected under 35 U.S.C. 102 (b). This rejection is fully set forth in the prior non-final Office action mailed March 3, 2006.

Claims 13, 18, 19, 24, 25, 38, 43, 44, 49, 50, 63 and 64 are rejected under 35 U.S.C. 103(a).

This rejection is fully set forth in the prior non-final Office action mailed March 3, 2006.

Claims 9 and 34 are rejected under 35 U.S.C. 103(a). This rejection is fully set forth in the prior non-final Office action mailed March 3, 2006.

Claims 10, 35 and 55 are rejected under 35 U.S.C. 103(a). This rejection is fully set forth in the prior non-final Office action mailed March 3, 2006.

Claims 12 and 37 are rejected under 35 U.S.C. 103(a). This rejection is fully set forth in the prior non-final Office action mailed March 3, 2006.

(10) Response to Argument

Applicant argues that the blow down step in Fuderer does not take place directly following the equalization down stage, however in the embodiment of figures 5-7 for example, the Fuderer PP stage anticipates the second equalization down stage as claimed because the vessel product end is coupled to the product end of an adjacent vessel at a purge pressure to lower the pressure. For the purposes of anticipation, the PP state of Fuderer is taken to be another equalization down stage because its function is the same as applicant's claimed equalization down stages.

Applicant also argues that Fuderer specification does not appear to indicate how the vessels are interconnected during the down stages and PP stage, however the process flow diagram, time diagram, and valve operation chart of figures 5-7, for example, show that the product ends are coupled. To illustrate the process conduit couplings during the system operation, the examiner has attached copies of figure 5 annotated for the first eight time cycles, showing open valves and vessel conditions. Applicant further argues the Fuderer fails to disclose vessel coupling in the PP stage, however note in the first time cycle for figure 5, for example, where vessel 5 in the PP stage is coupled to the product end of vessel 4 which is in a purge stage, via valves 34 and 35. With respect to claim 52, the system is additionally inherently capable of performing all of the steps regardless of the disclosed operation because it contains all of the structural components needed to do so.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that a second equalization down stage includes coupling the product end of the vessel to the product end of an

Art Unit: 1724

adjacent vessel and that there is a blow-down stage directly following the second down stage) are not recited in the rejected claim 28. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant also argues that Fuderer fails to disclose a purge stage including feeding reduced-pressure product gas into the product end of the vessel, however this takes place as co-current product gas emanating from a vessel in a PP stage is directed to a vessel in a purge stage. With respect to claim 7, applicant argues that Fuderer fails to disclose fourth equilibrium down and up stages, however this embodiment is disclosed in figures 11-13, col. 12, line 66 to col. 13, line 26.

Applicant also argues that the Fuderer system does not operate at pressures less than 7 atm, however it is submitted that the prior system operates in a broad range of pressures over its time cycle, including pressures at and between 41-83 psi (about 3-6 atm) during depressurization and blow-down stages (see figures 4a, 4b, col. 9, lines 35-50). With respect to claims 19, 44 and 64, the examiner agrees that Fuderer *alone* does not specifically disclose using a zeolite 5A adsorbent, but does disclose using a calcium zeolite A in an example. It is the examiner's contention that one having ordinary skill in the art would have known to select a type of zeolite that is most effective for adsorbing target contaminants based on cost, availability, the level of contamination, and the desired purity level of the product gas.

With respect to the rejections of claims 9, 10, 12, 13, 18, 24, 34, 35, 37, 38, 43, 49, 50, 55 and 63, applicant has not provided any different arguments but has asserted that the secondary references also fail to disclose the recited sequence of pressure swing adsorption (PSA) cycle

Art Unit: 1724

steps. The examiner has not used any of the secondary reference to show PSA cycle steps but instead to show a motivation for using other features such as a single rotary valve instead of multiple valves and for providing purified hydrogen to a fuel cell.

With respect to the 35 U.S.C 112 first and second paragraph rejections of claims 6 and 7, applicant states that one of ordinary skill in the art would recognize that the blow-down stage follows the third or fourth equalization down stage, even though the independent claims state that the blow-down stage *directly* follows the second equalization down stage. This is not found persuasive because PSA methods can have intermediate pressurization or depressurization steps that do not follow traditional system cycle pressure profiles. Also, the independent claims were amended in the first place to include the word “directly” in attempt to distinguish over the Fuderer reference which has the PP step between the equalization down step and blow-down steps, so applicant is arguing that the blow-down step does not have to directly follow the second equalization down step.

With respect to the 35 U.S.C. 112 second paragraph rejection of claims 13, 15, 16, 38, 40, 41, 58, 60 and 61, applicant argues that one of ordinary skill in the art would know that the recited percentages are mole, volume or weight percent, but does not point out which one is being used. The examiner does not agree and cannot determine whether the recited concentrations are by mole, volume or weight percent.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Art Unit: 1724

Respectfully submitted,

Frank M. Lawrence



Primary Examiner

10-17-06

AU 1724

Conferees:

Duane Smith



Gregory Mills

